Please cancel Claims 13 and 36 without prejudice or disclaimer of subject matter, and amend Claims 10, 12, 20, 29, 37, 51, 52, 55, 60, 61, 64 and 66 as shown below. The claims, as pending in the subject application, now read as follows:

1. (Withdrawn) A method of seeding an image, the image comprising a plurality of pixels, wherein said method comprises the step of:

distributing seeds in areas of the image as a function of a property of the pixels within those areas, wherein fewer seeds are allocated to those areas of the image having pixels homogeneous in the property.

2. (Withdrawn) A method as claimed in claim 1, wherein said distribution step comprises the sub-steps of:

dividing the image into a plurality of areas;

allocating, for each divided area, one or more seeds as a function of the property within the divided area and the size of the divided area as compared to the size of the image; and

storing the locations of each allocated seed.

3. (Withdrawn) A method as claimed in claim 1, wherein said distribution step comprises the sub-steps of:

selecting the image or a previously divided area of the image as the current area;

seeding the center of the current area when a difference between a maximum and minimum value of the property within the current area is less than a first predetermined threshold;

subdividing the current area when the size of the current area is greater than a second predetermined threshold and the difference is greater than or equal to the first predetermined threshold;

uniformly seeding the current area in a low density manner when the size of the area is less than or equal to the second predetermined threshold and the difference is greater than or equal to the first predetermined threshold and less than a third predetermined threshold;

subdividing the current area when the size of the area is greater than a fourth predetermined threshold and less than or equal to the second predetermined threshold and the difference is greater than or equal to the third predetermined threshold;

uniformly seeding the current area in a high density manner when the size of the area is less than or equal to a fourth predetermined threshold and the difference is greater than or equal to the third predetermined threshold; and

repeating the sub-steps of the distribution step until all of the divided areas are seeded.

4. (Withdrawn) A method as claimed in claim 3, wherein said subdividing steps comprise subdividing the current area into four areas.

5. (Withdrawn) A method as claimed in claim 1, wherein the property of the pixels is luminance.

6. (Withdrawn) A method of seeding an image having a plurality of pixels, the method comprising the steps of:

dividing the image into one or more regions;

allocating, for each region, one or more seeds as a function of the contrast of the pixels within the region and the size of the region as compared to the size of the image, wherein fewer seeds are allocated to those regions of the image having pixels of homogeneous contrast; and

storing the pixel locations of each allocated seed.

7. (Withdrawn) A method as claimed in claim 6, wherein said allocation step comprises the sub-steps of:

selecting the image or a previously divided area of the image as the current area;

seeding the center of the current area when the contrast within the current area is less than a first predetermined threshold;

subdividing the current area when the size of the current area is greater than a second predetermined threshold and the contrast is greater than or equal to the first predetermined threshold;

uniformly seeding the current area in a low density manner when the size of the area is less than or equal to the second predetermined threshold and the contrast is greater than or equal to the first predetermined threshold and less than a third predetermined threshold;

subdividing the current area when the size of the area is greater than a fourth predetermined threshold and less than or equal to the second predetermined threshold and the contrast is greater than or equal to the third predetermined threshold;

uniformly seeding the current area in a high density manner when the size of the area is less than or equal to a fourth predetermined threshold and the contrast is greater than or equal to the third predetermined threshold; and

repeating the sub-steps of the distribution step until all of the divided areas are seeded.

8. (Withdrawn) A method as claimed in claim 7, wherein said subdividing steps comprise subdividing the current area into four areas.

9. (Withdrawn) A method of seeding an image comprising a plurality of pixels, wherein said method comprises the steps of:

selecting the image or a previously divided area of the image as the current area;

seeding the center of the current area when the contrast of the pixels and the size of current area meet a first predetermined condition;

subdividing the current area when the contrast of the pixels and the size of current area meet a second predetermined condition;

uniformly seeding the current area in a low density manner when the contrast of the pixels and the size of current area meet a third predetermined condition;

subdividing the current area when contrast of the pixels and the size of current area meet a fourth predetermined condition;

uniformly seeding the current area in a high density manner when the contrast of the pixels and the size of current area meet a fifth predetermined condition; and

repeating said selecting and seeding steps until all of the divided areas are seeded, wherein fewer seeds are allocated to those areas of the image having homogeneous contrast.

10. (Currently amended) A method of segmenting an image, the image comprising a plurality of pixels, wherein said method comprises the steps of:

allocating one or more pixels as seeds;

growing regions from the seeds so as to segment the image into regions, wherein only a number of pixels that border the regions are considered, the number being smaller than a total number of pixels that border the regions, and <u>wherein a variable step size is used to scan the bordering pixels, the step size being a function of the quantity of bordering pixels, and</u> the considered pixel that is most similar in a property to a region bordered by the considered pixel is appended to the region to form an expanded region and the property of the expanded region is updated; and

repeating said growing step until no pixels bordering the regions are available.

11. (Previously presented) A method as claimed in claim 10, wherein the property of the pixels is luminance.

12. (Currently amended) A method of segmenting an image into regions, the image comprising a plurality of pixels, said method comprising the steps of:

(a) allocating one or more pixels as seeds for the regions;

(b) generating a list of pixels that border the regions;

(c) scanning only a subset of pixels in the list of pixels, the number of pixels in the subset being smaller than the number of pixels in the list;

(d) determining a value, for each scanned pixel, indicative of the similarity of a property of the scanned pixel and the corresponding property of a region that the scanned pixel borders;

(e) selecting a scanned pixel that is most similar in the property to the region that borders the scanned pixel, wherein, if a current scanned pixel has a value below a minimum threshold, said scanning step terminates and the current scanned pixel is selected;

(f) appending the selected pixel to the region bordered by the selected pixel;

(g) calculating an updated property of the region as a function of the property of the region prior to said appending step and the property of the appended pixel; and

(h) repeating steps (b) to (g) until the image is segmented.

13. (Canceled)

14. (Previously presented) A method as claimed in claim 12, wherein a variable step size is used to scan the list of pixels, the step size being a function of the length of the list of pixels, and said selection step selects a pixel having a value which is the minimum of all the scanned pixels.

15. (Previously presented) A method as claimed in claim 12, wherein the property is the grey-value of the pixels.

16. (Previously presented) A method as claimed in claim 12, wherein the value is determined in accordance with the following:

$$\delta(x) = \left| g(x) - \underset{y \in A_i(x)}{\text{mean}}\left[g(y) \right] \right|,$$

where g(x) is the grey value of the image point x adjoining region $A_i(x)$ and g(y) is the grey value of the image point y within region $A_i(x)$.

17. (Previously presented) A method as claimed in claim 12, wherein the value is determined in accordance with a metric in color space.

18. (Previously presented) A method as claimed in claim 12, wherein said method further comprises a step of merging regions which have similarities.

19. (Previously presented) A method as claimed in claim 18, wherein said merging step comprises the sub-steps of:

a) determining for each pair of neighboring regions a clique function value representative of the similarity of the property of the pair of neighboring regions;

b) selecting the pair of regions with the smallest clique function value;

c) merging both the selected regions to produce a merged region and updating the merged region's clique functions with neighboring regions, if the smallest clique function value is less than a predetermined threshold; and

repeating the sub-steps a) to c) of said merging step until the smallest clique function value is greater than or equal to the threshold.

20. (Currently amended) A method of segmenting an image, the image comprising a plurality of pixels, said method comprising the steps of:

allocating one or more pixels as seeds in the image; and

growing regions of pixels from the seeds, wherein said growing step comprises the sub-steps of:

generating a list of pixels that border the regions;

scanning a number of the pixels of the list using a step size between scanned pixels that is a function of the length of the list;

determining, for each scanned pixel, a value indicative of the similarity of the luminance of the scanned pixel and the corresponding luminance of a region that the scanned pixel borders;

selecting a pixel that has a minimum [[the]] value;

appending the selected pixel to the region it borders;

updating the corresponding luminance of the region that includes the appended pixel; and

repeating the sub-steps of the growing step until there are no more pixels that border the regions.

21. (Previously presented) A method as claimed in claim 20, wherein said selection step selects the first scanned pixel having a value below a minimum threshold.

22. (Previously presented) A method as claimed in claim 20, wherein said selection step selects a pixel having a value which is the minimum of all the scanned pixels.

23. (Previously presented) A method as claimed in claim 20, wherein the value is determined in accordance with the following:

$$\delta(x) = \left| g(x) - \underset{y \in A_i(x)}{\text{mean}} \left[g(y) \right] \right|,$$

where $g(x)$ is the grey value of the image point x adjoining region $A_i(x)$ and $g(y)$ is the grey value of the image point y within region $A_i(x)$.

24. (Previously presented) A method as claimed in claim 20, wherein the method further comprises the step of:

merging neighboring regions to produce a merged region if their similarity is less than a predetermined threshold.

25. (Withdrawn) A method of encoding an image having a number of segmented regions, the method comprising the steps of:

splitting the image into a plurality of rectangular areas, wherein each rectangular area comprises a the region or part thereof forming a dominant portion of the rectangular area;

merging the rectangular areas which have a common dominant portion and share a common edge; and

outputting the vertices of the merged rectangular areas as a representation of the segmented image.

26. (Withdrawn) A method as claimed in claim 25, wherein a region or part thereof within a said rectangular area forms a dominant portion if the size of the region or part thereof within the rectangular area divided by the size of the rectangular area is greater than a predetermined threshold.

27. (Withdrawn) A method as claimed in claim 26, wherein the predetermined threshold is 0.95.

28. (Withdrawn) A method as claimed in claim 25, wherein the rectangular areas include one or more equilateral rectangular areas.

29. (Withdrawn) A method as claimed in claim 25, wherein said splitting step comprises:

storing the segmented image in a queue;

performing the following sub-steps until the queue is empty;

removing and selecting the segmented image or a previously divided rectangular area of the segmented image currently stored first in the queue as the current rectangular area;

computing a value representative of the size of the dominant portion within the current area divided by the size of the current area;

storing the co-ordinates of the current area, if the value is greater than a predetermined threshold, otherwise;

splitting the current area into a plurality of rectangular areas and adding the plurality of rectangular areas to the queue.

30. (Previously presented) A method of segmenting an image, the image comprising a plurality of pixels and the method comprising the steps of:

allocating one or more pixels as seeds;

growing regions from the seeds so as to segment the image into a number of regions;

storing the segmented image in a queue; and

performing the following sub-steps until the queue is empty:

removing and selecting the segmented image or a previously divided rectangular area of the segmented image currently stored first in the queue as the current rectangular area;

computing a value representative of the size of a dominant segmented region within the current area divided by the size of the current area;

storing the co-ordinates of the current area, if the value is greater than a predetermined threshold, otherwise;

dividing the current area into a plurality of rectangular areas and adding the plurality of rectangular areas to the queue;

merging the divided rectangular areas which have a common dominant region and share a common edge; and

outputting the vertices of the merged rectangular areas as a representation of the segmented image.

31. (Previously presented) A method as claimed in claim 30, wherein said performing step further comprises the sub-step of:

storing the co-ordinates of the current area, if the size of the current area is less than a predetermined size.

32. (Previously presented) A method as claimed in claim 30, wherein the rectangular areas comprise one or more equilateral rectangular areas.

33. (Original) A method as claimed in claim 30, wherein said dividing sub-step comprises dividing the current area into four rectangular areas.

34. (Previously presented) A method as claimed in claim 30, wherein the predetermined threshold is 0.95.

35. (Currently amended) A method of segmenting an image, the image comprising a plurality of pixels, said method comprising the steps of:

distributing seeds in areas of the image as a function of a property of the pixels within those areas, wherein fewer seeds are allocated to those areas of the image having pixels homogeneous in the property, and wherein said distribution step comprises the sub-steps of:

(a) dividing the image into a plurality of areas;

(b) allocating, for each divided area, one or more seeds as a function of the property within the divided area and the size of the divided area as compared to the size of the image; and

(c) storing the locations of each allocated seed;

growing regions from the seeds so as to segment the image into regions, wherein only a number of pixels that border the regions are considered, the number being smaller than a total number of pixels that border the regions, and the considered pixel that is most similar in a property to a region bordered by the considered pixel is appended to the region to form an expanded region and the property of the expanded region is updated; and

repeating said growing step until no pixels bordering the regions are available.

36. (Canceled)

37. (Currently amended) A method as claimed in claim 35 [[36]], wherein said distribution step comprises the sub-steps of:

selecting the image or a previously divided area of the image as the current area;

seeding the center of the current area when the difference between the maximum and minimum values of the property of the pixels within the current area is less than a first predetermined threshold;

subdividing the current area when the size of the current area is greater than a second predetermined threshold and the difference is greater than or equal to the first predetermined threshold;

uniformly seeding the current area in a low density manner when the size of the area is less than or equal to the second predetermined threshold and the difference is greater than or equal to the first predetermined threshold and less than a third predetermined threshold;

subdividing the current area when the size of the area is greater than a fourth predetermined threshold and less than or equal to the second predetermined threshold and the difference is greater than or equal to the third predetermined threshold;

uniformly seeding the current area in a high density manner when the size of the area is less than or equal to a fourth predetermined threshold and the difference is greater than or equal to the third predetermined threshold; and

repeating the sub-steps of the distribution step until all of the divided areas are seeded.

38. (Previously presented) A method as claimed in claim 37, wherein said subdividing steps comprise subdividing the current area into four areas.

39. (Previously presented) A method as claimed in claim 35, wherein the property of the pixels is luminance.

40. (Previously presented) A method as claimed in claim 35, wherein said growing step comprises the sub-steps of:

generating a list of pixels that border the growing regions;

scanning a subset of pixels from the list of pixels in a predetermined manner;

determining a value, for each scanned pixel, indicative of the similarity of a property of the scanned pixel and the corresponding the property of a growing region that the scanned pixel borders;

selecting a pixel that has a minimum value;

appending the selected pixel to the region bordered by the selected pixel;

updating the corresponding property of the region that includes the appended pixel; and

repeating the sub-steps of said growing step until the image is segmented.

41. (Previously presented) A method as claimed in claim 40, wherein said scanning step terminates if a current scanned pixel has a value below a minimum threshold and said selecting step selects the current scanned pixel.

42. (Previously presented) A method as claimed in claim 40, wherein a variable step size is used to scan the list, the step size being a function of the length of the list, and said selection step selects a pixel having a value which is the minimum of all the scanned pixels.

43. (Previously presented) A method as claimed in claim 35, wherein the method further comprises a step of merging the regions which have similarities.

44. (Previously presented) A method as claimed in claim 35, wherein the method further comprises the steps of:

splitting the image into a plurality of rectangular areas, wherein each rectangular area comprises a region or part thereof forming a dominant portion of the rectangular area;

merging the rectangular areas which have a common dominant portion and share a common edge; and

outputting the vertices of the merged rectangular areas as a representation of the segmented image.

45. (Previously presented) A method as claimed in claim 43, wherein said merging step comprises the sub-steps of:

determining for each pair of neighboring regions a clique function value representative of the similarity of the property of the pair of neighboring regions;

selecting the pair of regions with the smallest clique function value;

merging both the selected regions to produce a merged region and updating the merged region's clique functions with neighboring regions, if the smallest clique function value is less than a predetermined threshold;

repeating the sub-steps of the merging step until the smallest clique function value is greater than or equal to the threshold.

46. (Previously presented) A method of segmenting an image, the image comprising a plurality of pixels, said method comprising the steps of:

(a) allocating pixels as seeds in areas of the image as a function of the luminance of the pixels within those areas, wherein fewer seeds are allocated to those areas of the image having pixels of homogeneous luminance and wherein the seeds form growing regions;

(b) generating a list of pixels that border the growing regions;

(c) scanning a number of the pixels of the list of pixels using a step size between scanned pixels that is a function of the length of the list;

(d) determining, for each scanned pixel, a value indicative of the similarity of the luminance of the scanned pixel and the corresponding luminance of a growing region that the scanned pixel borders;

(e) selecting a pixel that has a minimum value;

(f) appending the selected pixel to the growing region it borders;

(g) updating the corresponding luminance of the region that includes the appended pixel; and

(h) repeating the sub-steps (b) to (g) until there are no more pixels that border the growing regions.

47. (Previously presented) A method as claimed in claim 46, wherein the method further comprises the step of:

(i) merging neighboring regions to produce a merged region if their similarity is less than a predetermined threshold.

48. (Withdrawn) Apparatus for seeding an image, the image comprising a plurality of pixels, wherein said apparatus comprises:

means for distributing seeds in areas of the image as a function of a property of the pixels within those areas, wherein fewer seeds are allocated to those areas of the image having pixels homogeneous in the property.

49. (Withdrawn) Apparatus for seeding an image having a plurality of pixels, the apparatus comprising:

means for dividing the image into one or more regions;

means for allocating, for each region, one or more seeds as a function of the contrast of the pixels within the region and the size of the region as compared to the size of the image, wherein fewer seeds are allocated to those regions of the image having pixels of homogeneous contrast; and

means for storing the pixel locations of each allocated seed.

50. (Withdrawn) Apparatus for seeding an image comprising a plurality of pixels, wherein said apparatus comprises:

means for selecting the image or a previously divided area of the image as the current area;

means for seeding the center of the current area when the contrast of the pixels and the size of current area meet a first predetermined condition;

means for subdividing the current area when the contrast of the pixels and the size of current area meet a second predetermined condition;

means for uniformly seeding the current area in a low density manner when the contrast of the pixels and the size of current area meet a third predetermined condition;

means for subdividing the current area when contrast of the pixels and the size of current area meet a fourth predetermined condition;

means for uniformly seeding the current area in a high density manner when the contrast of the pixels and the size of current area meet a fifth predetermined condition; and

means for repeating the operations of the selection and seeding means until all of the divided areas are seeded, wherein fewer seeds are allocated to those areas of the image having homogeneous contrast.

51. (Currently amended) Apparatus for segmenting an image, the image comprising a plurality of pixels, wherein said apparatus comprises:

means for allocating one or more pixels as seeds;

means for growing regions from the seeds so as to segment the image into a number of regions, wherein only a number of pixels that border the regions are considered, the number being smaller than a total number of pixels that border the regions, and wherein a variable step size is used to scan the bordering pixels, the step size being a function of the quantity of bordering pixels, and the considered pixel that is most similar in a property to a region bordered by the considered pixel is appended to the region to form an expanded region and the property of the expanded region is updated; and

means for controlling to effect repeated application of said means for growing regions until no pixels bordering the regions are available.

52. (Currently amended) Apparatus for segmenting an image, the image comprising a plurality of pixels, wherein said apparatus comprises:

means for allocating one or more pixels as seeds in the image; and

means for growing regions of pixels from the seeds, wherein said growing means comprises:

means for generating a list of pixels that border the regions;

means for scanning only a subset of the pixels of the list, the number of pixels in the subset being smaller that the number of pixels in the list;

means for determining, for each scanned pixel, a value indicative of the similarity of a property of the scanned pixel and the corresponding property of a region that the scanned pixel borders;

means for selecting a scanned pixel that is most similar in the property to the region that the scanned pixel borders, wherein, if a current scanned pixel has a value below a minimum threshold, said means for scanning stops scanning the subset of pixels and said means for selecting selects the current scanned pixel;

means for appending the selected pixel to the region bordered by the selected pixel;

means for calculating an updated property of the region as a function of the property of the region prior to the appending and the property of the appended pixel; and

means for repeating the operations of said growing means until there are no more pixels that border the regions.

53. (Withdrawn) Apparatus for encoding an image having a number of segmented regions, the apparatus comprising:

means for splitting the image into a plurality of rectangular areas, wherein each rectangular area comprises a region or part thereof forming a dominant portion of the rectangular area;

means for merging the rectangular areas which have a common dominant portion and share a common edge; and

means for outputting the vertices of the merged rectangular areas as a representation of the segmented image.

54. (Previously presented) Apparatus for segmenting an image, the image comprising a plurality of pixels and the apparatus comprising:

means for allocating one or more pixels as seeds;

means for growing regions from the seeds so as to segment the image into a number of regions;

means for storing the segmented image in a queue;

means for removing and selecting, until the queue is empty, the segmented image or a previously divided rectangular area of the segmented image currently stored first in the queue as the current rectangular area;

means for computing a value representative of the size of the dominant segmented region within the current area divided by the size of the current area;

means for storing the co-ordinates of the current area, if the value is greater than a predetermined threshold;

means for dividing the current area into a plurality of rectangular areas of the current area and adding the plurality of rectangular areas to the queue, if the value is less than or equal to the predetermined threshold;

means for merging the divided rectangular areas which have a common dominant region and share a common edge; and

means for outputting the vertices of the merged rectangular areas as a representation of the segmented image.

55. (Currently amended) Apparatus for segmenting an image, the image comprising a plurality of pixels, wherein said apparatus comprises:

means for distributing seeds in areas of the image as a function of a property of the pixels within those areas, wherein fewer seeds are allocated to those areas of the image having pixels homogeneous in the property, and wherein said means for distributing seeds comprises:

(a) means for dividing the image into a plurality of areas;

(b) means for allocating, for each divided area, one or more seeds as a function of the property within the divided area and the size of the divided area as compared to the size of the image; and

(c) means for storing the locations of each allocated seed;

means for growing regions from the seeds so as to segment the image into regions, wherein only a number of pixels that border the regions are considered, the number being smaller than a total number of pixels that border said regions, and the considered pixel that is most similar in a property to a region bordered by the considered pixel is appended to the region to form an expanded region and the property of the expanded region is updated; and

means for controlling to effect repeated application of said means for growing regions until no pixels bordering the regions are available.

56. (Previously presented) Apparatus for segmenting an image, the image comprising a plurality of pixels, wherein said apparatus comprises:

means for allocating pixels as seeds in areas of the image as a function of the luminance of the pixels within those areas, wherein fewer seeds are allocated to those areas of the image having pixels of homogeneous luminance and wherein the seeds form growing regions;

means for generating a list of pixels that border the growing regions;

means for scanning a number of the pixels of the list of pixels using a step size between scanned pixels that is a function of the length of the list;

means for determining, for each scanned pixel, a value indicative of the similarity of the luminance of the scanned pixel and the corresponding luminance of a growing region that the scanned pixel borders;

means for selecting a pixel that has a minimum the value;

means for appending the selected pixel to the growing region it borders;

means for updating the corresponding luminance of the region that includes the appended pixel; and

means for repeating the operations of the allocating means, generating means, scanning means, determining means, appending means, and updating means until there are no more pixels that border the growing regions.

57. (Withdrawn) A computer program product, including a computer readable medium having recorded thereon a computer program for seeding an image, the image comprising a plurality of pixels, wherein, said computer program product comprises:

means for distributing seeds in areas of the image as a function of a property of the pixels within those areas, wherein fewer seeds are allocated to those areas of the image having pixels homogeneous in the property.

58. (Withdrawn) A computer program product, including a computer readable medium having recorded thereon a computer program for seeding an image having a plurality of pixels, the computer program product comprising:

means for dividing the image into one or more regions;

means for allocating, for each region, one or more seeds as a function of the contrast of the pixels within the region and the size of the region as compared to the size of the image, wherein fewer seeds are allocated to those regions of the image having pixels of homogeneous contrast; and

means for storing the pixel locations of each allocated seed.

59. (Withdrawn) A computer program product, including a computer readable medium having recorded thereon a computer program for seeding an image comprising a plurality of pixels, wherein said computer program product comprises:

means for selecting the image or a previously divided area of the image as the current area;

means for seeding the center of the current area when the contrast of the pixels and the size of current area meet a first predetermined condition;

means for subdividing the current area when the contrast of the pixels and the size of current area meet a second predetermined condition;

means for uniformly seeding the current area in a low density manner when the contrast of the pixels and the size of current area meet a third predetermined condition;

means for subdividing the current area when contrast of the pixels and the size of current area meet a fourth predetermined condition;

means for uniformly seeding the current area in a high density manner when the contrast of the pixels and the size of current area meet a fifth predetermined condition; and

means for repeating the operations of the selection and seeding means until all of the divided areas are seeded, wherein fewer seeds are allocated to those areas of the image having homogeneous contrast.

60. (Currently amended) A computer program product, including a computer readable medium having recorded thereon a computer program for segmenting an image, the image comprising a plurality of pixels, wherein said computer program product comprises:

means for allocating one or more pixels as seeds;

means for growing regions from the seeds so as to segment the image into regions, wherein only a number of pixels that border the regions are considered, the number being smaller that a total number of pixels that border the regions, and wherein a variable step size is used to scan the bordering pixels, the step size being a function of the quantity of bordering pixels, and the considered pixel that is most similar in a property to a region bordered by the considered pixels is appended to the region to form an expanded region and the property of the expanded region is updated; and

means for controlling to effect repeated application of said means for growing regions until no pixels bordering the regions are available.

61. (Currently amended) A computer program product, including a computer readable medium having recorded thereon a computer program for segmenting an image, the image comprising a plurality of pixels, wherein said computer program product comprises:

means for allocating one or more pixels as seeds in the image; and

means for growing regions of pixels from the seeds, wherein said growing means comprises:

means for generating a list of pixels that border the regions;

means for scanning only a subset of the pixels of the list, the number of pixels in the subset being smaller than the number of pixels in the list;

means for determining, for each scanned pixel, a value indicative of the similarity of a property of the scanned pixel and the corresponding property of a region that the scanned pixel borders;

means for selecting a scanned pixel that is most similar in the property to the region that the scanned pixel borders, wherein, if a current scanned pixel has a value below a minimum threshold, said means for scanning stops scanning the subset of pixels and said means for selecting selects the current scanned pixel;

means for appending the selected pixel to the region bordered by the selected pixel;

means for calculating an updated property of the region as a function of the property of the region prior to the appending and the property of the appended pixel; and

means for repeating the operations of said growing means until there are no more pixels that border the regions.

62. (Withdrawn) A computer program product, including a computer readable medium having recorded thereon a computer program for encoding an image having a number of segmented regions, the computer program product comprising:

means for splitting the image into a plurality of rectangular areas, wherein each rectangular area comprises a region or part thereof forming a dominant portion of the rectangular area;

means for merging the rectangular areas which have a common dominant portion and share a common edge; and

means for outputting the vertices of the merged rectangular areas as a representation of the segmented image.

63. (Previously presented) A computer program product, including a computer readable medium having recorded thereon a computer program for segmenting an image, the image comprising a plurality of pixels and the computer program product comprising:

means for allocating one or more pixels as seeds;

means for growing regions from the seeds so as to segment the image into a number of regions;

means for storing the segmented image in a queue;

means for removing and selecting, until the queue is empty, the segmented image or a previously divided rectangular area of the segmented image currently stored first in the queue as the current rectangular area;

means for computing a value representative of the size of the dominant segmented region within the current area divided by the size of the current area;

means for storing the co-ordinates of the current area, if the value is greater than a predetermined threshold;

means for dividing the current area into a plurality of rectangular areas of the current area and adding the plurality of rectangular areas to the queue, if the value is less than or equal to the predetermined threshold;

means for merging the divided rectangular areas which have a common dominant region and share a common edge; and

means for outputting the vertices of the merged rectangular areas as a representation of the segmented image.

64. (Currently amended) A computer program product, including a computer readable medium having recorded thereon a computer program for segmenting an image, the image comprising a plurality of pixels, wherein said computer program product comprises:

means for distributing seeds in areas of the image as a function of a property of the pixels within those areas, wherein fewer seeds are allocated to those areas of the image having pixels homogeneous in the property, and wherein said means for distributing seeds comprises:

(a) means for dividing the image into a plurality of areas;

(b) means for allocating, for each divided area, one or more seeds as a function of the property within the divided area and the size of the divided area as compared to the size of the image; and

(c) means for storing the locations of each allocated seed;

means for growing regions from the seeds so as to segment the image regions, wherein only a number of pixels that border the regions are considered, the number being smaller than a total number of pixels that border the regions, and the considered pixel that is most similar in a property to a region bordered by the considered pixel is appended to the region to form an expanded region, and the property of the expanded region is updated; and

means for controlling to effect repeated application of said means for growing regions is repeatedly applied until no pixels bordering the regions are available.

65. (Previously presented) A computer program product, including a computer readable medium having recorded thereon a computer program for segmenting an image, the image comprising a plurality of pixels, wherein said computer program product comprises:

means for allocating pixels as seeds in areas of the image as a function of the luminance of the pixels within those areas, wherein fewer seeds are allocated to those areas of the image having pixels of homogeneous luminance and wherein the seeds form growing regions;

means for generating a list of pixels that border the growing regions;

means for scanning a number of the pixels of the list of pixels using a step

size between scanned pixels that is a function of the length of the list;

means for determining, for each scanned pixel, a value indicative of the

similarity of the luminance of the scanned pixel and the corresponding luminance of a

growing region that the scanned pixel borders;

means for selecting a pixel that has a minimum value;

means for appending the selected pixel to the growing region it borders;

means for updating the corresponding luminance of the region that includes

the appended pixel; and

means for repeating the operations of said allocating means, generating

means, scanning means, determining means, appending means, and updating means until

there are no more pixels that border the growing regions.

66.   (Previously presented) A method as claimed in claim 13, wherein the

threshold is the determined value of the most recently selected pixel.

67.   (Previously presented) A method as claimed in claim 21, wherein the

threshold is the determined value of the most recently selected pixel.